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# UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No. 856.1043

First Named Inventor or Application Identifier:

Tomaz DUCZMAL et al.

Title: METHOD AND SYSTEM FOR DYNAMIC DISPLAY OF MARKETING CAMPAIGNS ON DISPLAY LOCATIONS VIA A NETWORK

## APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

ADDRESS TO: Assistant Commissioner for Patents  
Box Patent Application  
Washington, DC 20231

1.  Fee Transmittal Form
2.  Specification, Claims & Abstract ..... [ Total Pages: 12 ]
3.  Drawing(s) (35 USC 113) ..... [ Total Sheets: 6 ]
4.  Oath or Declaration ..... [ Total Pages: 3 ]
  - a.  Newly executed (original or copy)
  - b.  Copy from a prior application (37 CFR 1.63(d)) (for continuation/divisional with Box 17 completed)
    - i.  DELETION OF INVENTOR(S)  
Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
5.  Incorporation by Reference (usable if Box 4b is checked)  
The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.
6.  Microfiche Computer Program (*Appendix*)
7.  Nucleotide and/or Amino Acid Sequence Submission (*if applicable, all necessary*)
  - a.  Computer Readable Copy
  - b.  Paper Copy (identical to computer copy)
  - c.  Statement verifying identity of above copies

## ACCOMPANYING APPLICATION PARTS

8.  Assignment Papers (cover sheet & document(s))
9.  37 CFR 3.73(b) Statement (*when there is an assignee*)  Power of Attorney
10.  English Translation Document (*if applicable*)
11.  Information Disclosure Statement (IDS)/PTO-1449  Copies of IDS Citations
12.  Preliminary Amendment
13.  Return Receipt Postcard (MPEP 503) (*Should be specifically itemized*)
14.  Small Entity Statement(s)  Statement filed in prior application, status still proper and desired.
15.  Certified Copy of Priority Document(s) (*if foreign priority is claimed*)
16.  Other: Deposit Account Charge Authorization

## 17. If a CONTINUING APPLICATION, check appropriate box and supply the requisite information:

Continuation  Divisional  Continuation-in-part (CIP) of prior application No: \_\_\_\_\_ / \_\_\_\_\_

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**METHOD AND SYSTEM FOR DYNAMIC DISPLAY OF MARKETING CAMPAIGNS ON DISPLAY LOCATIONS VIA A NETWORK**

**Field of the Invention**

5           The present invention relates in general to displaying advertising material and more specifically to a method and system for dynamic display of marketing campaigns on display locations via a network.

**Background of the Invention**

10          In today's economy, advertising and promotions play a significant role in marketing campaigns. Traditionally, one of the ways to deliver promotional messages has been via use of billboards and posters located in public places. This requires a long and inefficient process, involving graphic designers, printing houses, advertising agencies and billboard owners.

15          Since the life cycle of many products is quite short, a quick method of delivering advertising material is required. In the past, advertisers spent six or more months for advertising campaigns. Such lead times are becoming less and less feasible. The effectiveness of marketing tools depends heavily on timing, graphical form and attractiveness of the message presented. Consumers now expect dynamic multimedia displays as seen on the Internet and graphic designers want to express themselves in a new ways. In contrast, prior art billboard and poster displays are generally static where one site is occupied by the same material for a long duration of time. Also, the content displayed on the billboards and posters is difficult to change.

20          Marketing has become a complicated international business process requiring many interactions between many global participants. The logistics of putting new content on or updating the billboards, for example in response to market fluctuations, is complicated and involves several parties, which raises the cost and extends the time from conception to actual display of the poster (i.e. a new printed poster to be installed over the old one). Furthermore, only one advertiser can use each billboard location at any given time. Finally, marketing campaign designers are forced to deal with many billboard operators with different business practices and requirements. This slows down delivery of campaign content and limits the flexibility in delivery method.

In recent years, an unprecedented growth in the economy has been experienced. An undisputed factor in this growth is the role of the Internet which enables business to be performed over the Internet. This includes broadcasting information about available products and services, taking orders for goods and enabling flow of information between business participants.

Advertising has also become prevalent on the Internet as exemplified by US Patent 6,009,409 to Adler et al. and International patent application NO WO97/41546 to Hylin et al.. US Patent 6,009,409 is directed at a system for controlling timing and form of advertisements sent to users who are actively browsing the Internet. WO 97/41546 describes a system which focuses on the control of displays over private local area networks with limited telephone access.

In both of these prior art systems, advertising material is shown to the user without the user's consent. The advertiser takes advantage of the fact that a user is browsing a screen and places their advertising in an available space. Also, both systems are susceptible to unauthorized access since the owner of the display has no control over the advertising material.

In order to overcome the limitations of the prior art, there is provided a method and system for scheduling the dynamic display of marketing campaigns via a network.

The present invention provides a method and system for dynamic display of marketing campaigns via a network. The system comprises a central server which contains information concerning display locations as well as available time slots. An advertiser accesses the central server to select a time slot for a specific display location and then uploads the advertising material to the central server. Prior to the occurrence of the allotted time slot, the advertising material is uploaded to the display location and displayed at when the time slot occurs.

Integrity checks are performed on the advertising material to ensure that the material is displayable.

The advertiser is also allowed to monitor the content being displayed so that the advertiser can see the advertising material allocated to a display location and time slot.

The display locations are computerized devices with a processor and an ability to communicate with the server. The basic functionality of the display location is to display advertising material, in the form of a valid image object, during the allocated time slot. Prior to expiry of validity of an image object allocated to a current time slot, the display location 5 triggers a communication session with the server to upload the next valid object to be displayed.

Also, the present invention allows advertisers in a marketing campaign to access the server via the Internet. Since all information relating to advertising material (image objects), time slots and display locations flows through the server, the server aids in 10 standardizing the method of doing business for advertisers. The server stores image objects, uploaded by the advertiser, in a central database to be downloaded to display locations when requested by the display location.

According to an aspect of the present invention, there is provided a system for dynamic display of marketing campaigns on display locations via a network comprising:

15           a database for storing advertising material;  
              at least one display location for displaying said advertising material;  
              a server for managing said advertising material provided to said at least one display location; and  
              a plurality of input sources for providing scheduling information and said advertising 20 material to said server for scheduling said display of said advertising material on said at least one display location.

According to another aspect of the present invention, there is provided a method for dynamically displaying marketing campaigns on display locations via a network comprising the steps of:

25           accessing a server, via said network, to retrieve available time slots associated with at least one display location;  
              selecting a time slot from said available time slots for displaying advertising material;  
              storing said advertising material in a database;  
              uploading said advertising material to said display location prior to occurrence 30 of said selected time slot; and  
              displaying said advertising material at said display location when said time slot occurs.

According to yet another aspect of the present invention there is provided A computerized billboard comprising:

- 5            a display device;
  - a communicator;
  - an objects storage; and
  - a processor;
- wherein said processor comprises:
- 10            operating system software;
  - display software;
  - communication software;
  - object manager software; and
  - FTP/VPN transfer software.

#### **Brief Description of the Detailed Drawings**

15            An embodiment of the present invention will now be described more fully with reference to the accompanying drawings in which:

Figure 1 is a schematic diagram of the system of the present invention;

Figure 2 is a more detailed schematic diagram of the system of the present invention; and

20            Figures 3 – 6 are flowcharts detailing work flow processes according to the preferred embodiment.

#### **General Description of the Preferred Embodiment**

A schematic diagram of the information system for providing effective collaboration between marketing campaigns participants and secure delivery of advertising material to a display location is shown in Figure 1. The system **10** comprises a plurality of display locations **12** connected to a central server **14** which, in turn, is connected to a plurality of input sources **16** via the Internet **17**. In the preferred embodiment, the input sources are personal computers.

30            Each display location **12** generally comprises at least one computerized device, preferably a computerized billboard, **18**, a display device **20**, a communicator **22**, an objects storage **24** and a processor **26**. The objects storage **24** is preferably non-volatile memory. The billboard **18** is a stationary space used to display advertising material via the

display device **20** which may be a computer video display such as an LCD panel, an LED panel, a projecting device utilizing digital light processing device or a cathode ray tube (CRT). The processor **26** controls logic and events sequence of the billboard **18** and display device **20** of the display location **12**. Communication between each display location **12** and the server **14** is achieved via the communicator **22**. In the preferred embodiment, the communicator is a modem. The display location **12** may also be connected to the server **14** through an Internet Service Provider **19** via a virtual private network session.

Turning to Figure 2, a more detailed schematic of the software modules of the processor **26** and the server **14** is provided. The processor **26** comprises operating system software **28** which executes display software **30**, local controller software **32**, communication software **34**, object manager software **36** and FTP/VPN transfer software **38**. The operating system software **28** provides support to the billboard **18** based on micro-kernal technology with message passing. The display software **30** enables decoding, decompression and display of images, animations and video on the display device **20**. The local controller software **32** checks validity of the advertising material (in the form of at least one image object) and sends the material to the display software **30**. The validity checks and displays progress through subsequent time slots up to the end of a display cycle and re-starts. The validity check relates to expiration date and time. If the expiration time of an image object allocated to the current time slot is shorter than a predefined time window, the local controlled software **32** sends a signal to the object manager **36**. The object manager software **36** triggers communication module **34** to establish a communication channel with the server **14**. Finally, the FTP client software **38** executes FTP software once the communication channel is created. The FTP software assists in the downloading of information, including the image object for the following time slot, from the server **14**. This results in the display of a new image object when the subsequent time slot arrives in the next display cycle.

The server **14** comprises a distribution engine **40**, a slot allocator **42**, a transaction system **44**, a monitoring system **46**, a location identifier **48** and a central database **52**. Application engines stored on a web server **50** are accessed by an administrator, via an administrative computer **56**, or by an advertiser, via one of the input sources **16**. The server **14** and the application engines provide business logic which enable interaction of many advertisers with many consumers. The server **14** is separated from the Internet by a corporate firewall **59**. The corporate firewall **59** is configured such that only certain objects may pass through to the server **14** from the Internet **17**.

The distribution engine **40** uploads image objects from the input sources **16** and checks the objects for technical integrity before storing them in the central database **52** along with scheduling and display location information. The slot allocator **42** maintains and tracks available time slots at display locations **12**. The transaction system **44** enables payments, cancellations and tracks orders and invoice status. The monitoring system **46** allows for real-time viewing, on an input source **16**, the content being displayed on the billboard **18** at the display location **12**. The location identifier **48** allows advertisers to search the central database **52** for description, statistical and technical information on each display location **12**. The central database **52** also stores data for use by the distribution engine **40**, the slot allocator **42**, the transaction system **44** and the monitoring system **46**.

Several services are located between the corporate firewall **59** and a main firewall **58**. These services secure the connection between the input source **16** and the server **14**. The services includes the web server **50**, an FTP/VPN server **51**, a security module **53**, a communications module **55**, a personalization module **57** and a context service module **61**.

The web server **50** passes html pages dynamically created by the server **14** when requested by an input source **16**. The FTP/VPN server **51** opens, closes and maintains file transfer channels between the input sources **16** and the server **14**. Security module **53** maintains and verifies user profiles, names, roles, passwords, server access privileges and history logs of actions performed by the input source **16**. Communication module **55** enables dial in by display locations and translates file types from the processor **26** to the server **14**. Personalization module **57** maintains user profile data and creates html pages with a personalized look for the advertiser during the login session. Context module **61** tracks the history of past login sessions and returns an html page reflecting the stage of a business process from a previous login. Administrative functions for these modules are performed by a system administrator via the administration computer **56**.

Turning to Figures 3 - 6, flowcharts outlining various aspects of the present invention are provided. Firstly, an advertiser accesses the server **14** via one of the input sources **16**. After logging in (step **60**), the advertiser can either search a specific display location **12** (step **62**) or submit pre-requisite criteria for a display location **12** (step **64**).

If the advertiser decides to search a specific display location **12**, the advertiser then reviews data corresponding to the display location **12** (step **66**). This data may include address of physical location, size, display specification of the billboard, traffic data at the location, and demographic data related to the geographical location. After reviewing the data, the

advertiser reviews the available time slots, provided by the slot allocator **42**, (step **68**) and then subscribes to an available time slot to display the advertisement (step **70**). A flowchart outlining the operation of the slot allocator **42** is shown in Figure 4. Alternatively, if the advertiser decides to submit criteria for a display location **12** (step **64**), the advertiser then

5 proceeds to execute a selection routine (step **72**). This allows an advertiser to select a display location **12** based on pre-requisite criteria such as volume of traffic at the location and time slots available at the display location. After the selection routine has been executed, the advertiser reviews the results (step **74**) and selects a display location **12** (step **76**). The advertiser then reviews the display location data (step **66**), reviews available time slots (step

10 **68**) and subscribes to a time slot (step **70**).

After subscribing to a time slot, the advertiser uploads the advertising material to the server **14** (step **78**).

Once the advertising material is uploaded to the server **14**, the distribution engine **40** reviews the information for technical integrity (step **80**). After checking for technical integrity, the advertising material is reviewed for content integrity by the administrator (step **82**). If the advertising material does not pass the content integrity test, the advertiser is informed and is requested to amend the advertising material. Otherwise, the advertising material is approved and stored in the central database **52** (step **84**). The advertiser is then notified that the advertising material has been stored (step **86**). While the notification is being sent (step **88**), a financial transaction is executed (step **90**). The financial transaction may either be payment for the selected time slot (step **92**) or a check of the time remaining for a previously purchased time slot (step **94**). Upon confirmation of payment, the image object is ready to be uploaded to the display location **12** (step **96**). The image object must be uploaded to the display location **12** prior to the expiry of the previous time slot.

Turning to Figure 4, when an advertiser requests time slot information (step **96**), the central database **52** is queried (step **98**). The available time slots are then displayed on the input source **16** (step **100**). After the advertiser subscribes to a time slot (step **102**), the database **52** is updated with the new subscription (step **104**) and the time slot is deemed allocated (step **106**).

Turning to Figure 5, a flowchart outlining financial transactions is shown. When the advertiser executes a financial transaction (step **90**), the transaction module **44** performs two functions. The transaction module **44** calculates transaction fees (step **108**) and

aggregates air time information (step **110**) where more than one time slot on more than one display location has been subscribed to by a single advertiser.

After the transaction module **44** calculates transaction fees (step **108**), an invoice is then sent to the advertiser electronically or by regular air mail (step **112**). After payment is received (step **114**), credit is applied to the server operator (step **116**).

In parallel, the transaction module **44** aggregates air time information (step **110**), invoices are then aggregated (step **118**). An invoice is then sent (step **120**) and once payment is received (step **122**), a service fee is subtracted (step **124**). The server operator is credited (step **126**) and the payment is desegregated to different display location owners (step **128**). The display location owners are then credited (step **130**).

It may be also possible for advertisers to monitor their advertising material at the display location **12** via one of the input sources **16**, as shown in Figure 6. After monitoring is requested (step **132**), the central database **52** is queried (step **134**). The advertising material is then retrieved from the central database **52** (step **136**), converted to an html file (step **138**) and forwarded to the advertiser (step **140**).

It will be appreciated that, although only one embodiment of the invention has been described and illustrated in detail, various changes and modification may be made. One such modification is that communication between the input sources **16** and the server **14** and the server **14** and the display location **12** may be via any type of network and does not have to be restricted to the Internet. For example, a cellular network or even a radio network. All such changes and modifications may be made without departing from the spirit and scope of the invention as defined by the claims appended herein.

**What is Claimed is:**

1. A system for dynamic display of marketing campaigns on display locations via a network comprising:

- 5        a database for storing advertising material;  
            at least one display location for displaying said advertising material;  
            a server for managing said advertising material provided to said at least one display location; and  
            a plurality of input sources for providing scheduling information and said advertising material to said server for scheduling said display of said advertising material on said at least one display location.

10        2. The system of Claim 1 wherein said advertising material is at least one image object.

- 15        3. The system of Claim 1 wherein said display location comprises a computerized device.

20        4. The system of Claim 3 wherein said computerized device comprises a display device.

25        5. The system of Claim 4 wherein said display device is one of an LCD panel, an LED panel, a projecting device utilizing digital light processing device or a cathode ray tube (CRT).

6. The system of Claim 1 wherein said server comprises:  
            a distribution engine for uploading said scheduling information and said advertising material from said plurality of input sources, for managing said advertising material and for providing said advertising material to said at least one display location; and  
            a slot allocator for monitoring said scheduling of said display.

30        7. The system of Claim 6 wherein said server further comprises:  
            a transaction system for enabling payment, cancellations and status checking.

8. The system of Claim 1 wherein said server further comprises a monitoring system for providing a view of said advertising material, allocated to a display location, to at least one of said plurality of input sources.

5 9. The system of Claim 7 wherein said server further comprises:  
a location identifier for providing description, statistical and technical information concerning said at least one display location to at least one of said plurality of input sources.

10. The system of Claim 1 wherein said network is the Internet.

10  
11. A method dynamic displaying of marketing campaigns via a network comprising the steps of:

accessing a server, via said network, to retrieve available time slots associated with at least one display location;

15 selecting a time slot from said available time slots for displaying advertising material;  
storing said advertising material in a database;  
uploading said advertising material to said display location prior to occurrence of said selected time slot; and

20 displaying said advertising material at said display location when said time slot occurs.

12. The method of Claim 11 further comprising the step of searching for a display location before said step of selecting a time slot from said available time slots.

25 13. The method of Claim 12 further comprising the step of retrieving display location data after said step of searching for a display location.

14. The method of Claim 11 further comprising the step of checking said advertising material for technical integrity before said step of storing said advertising material in a 30 database.

15. The method of Claim 11 further comprising the step of performing financial transactions before said step of uploading said advertising material.

16. The method of Claim 15 wherein said step of performing financial transactions comprising the steps of calculating transaction fees and aggregating air time information.

5 17. A computerized billboard comprising:

- a display device;
- a communicator;
- an objects storage; and
- a processor;

10 wherein said processor comprises:

- operating system software;
- display software;
- communication software;
- object manager software; and
- FTP/VPN transfer software.

15

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**ABSTRACT**

The present invention provides a method and system for the dynamic display of marketing campaigns on display locations via a network. The system comprises a database for storing advertising material and display locations for displaying the advertising material. The system also comprises a server for managing the advertising material provided to the display location. Also included are a plurality of input sources connected to server to provide scheduling information and the advertising material to the server for scheduling display of the advertising material on the display location.

FIGURE 1

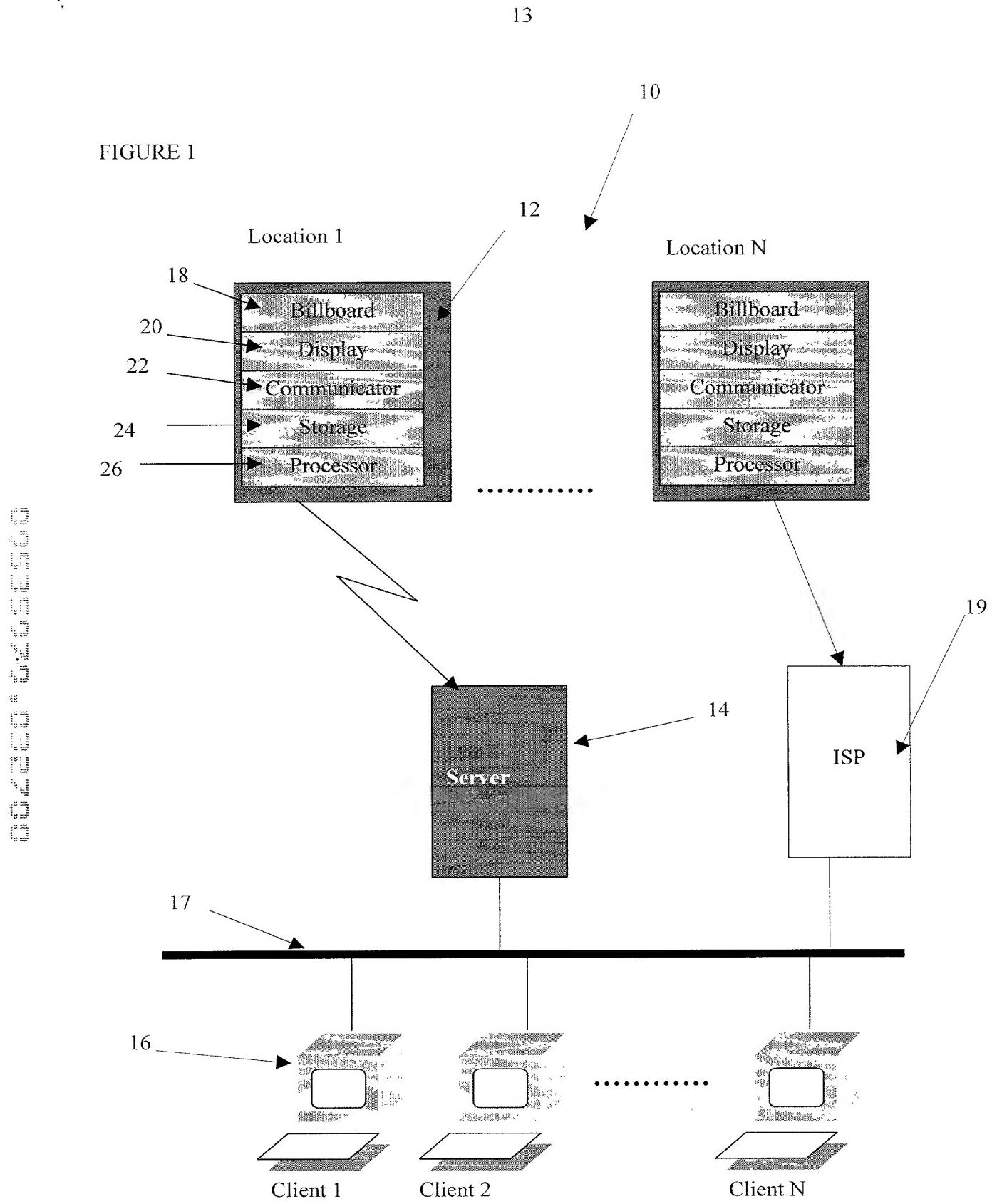


FIGURE 2

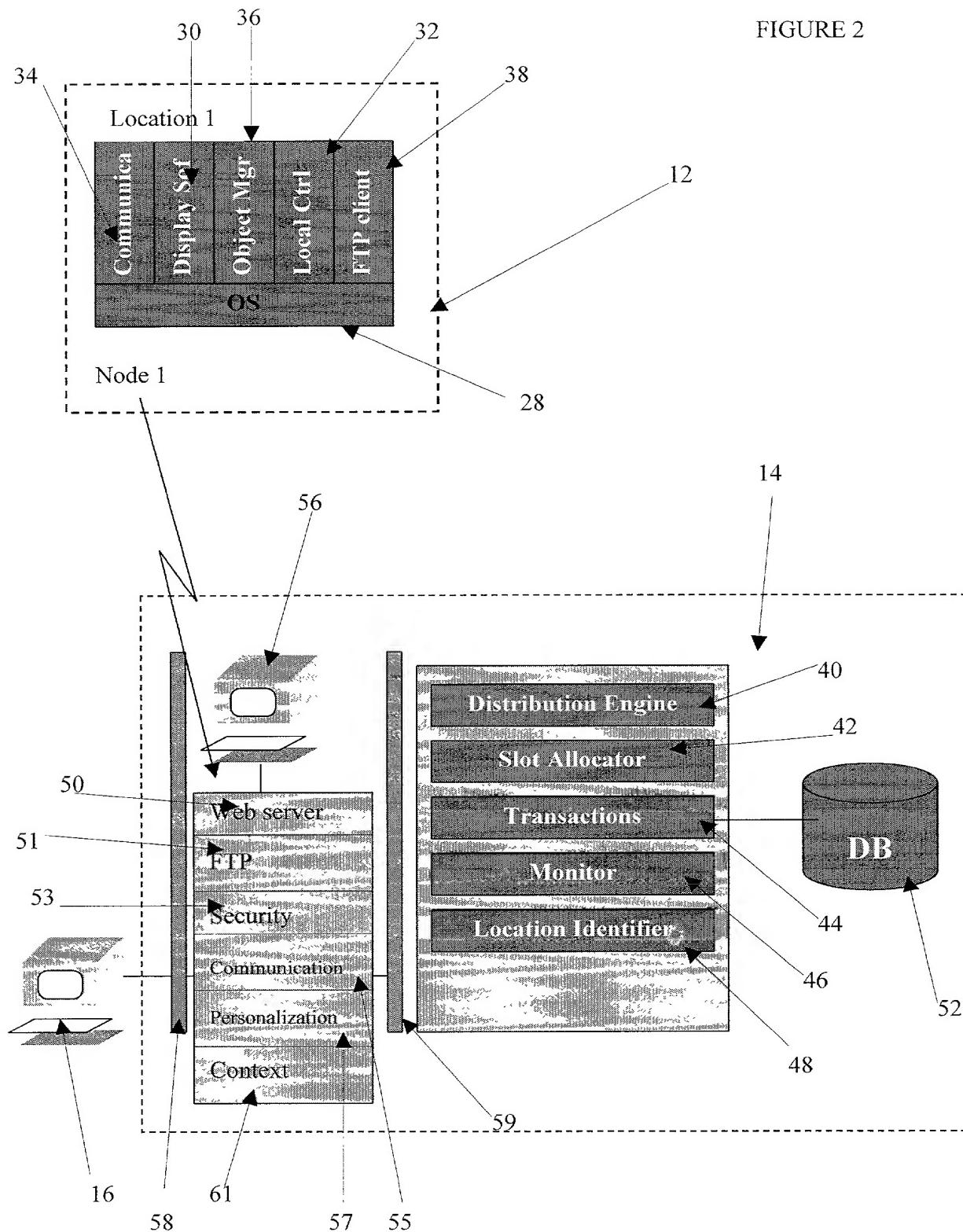


FIGURE 3

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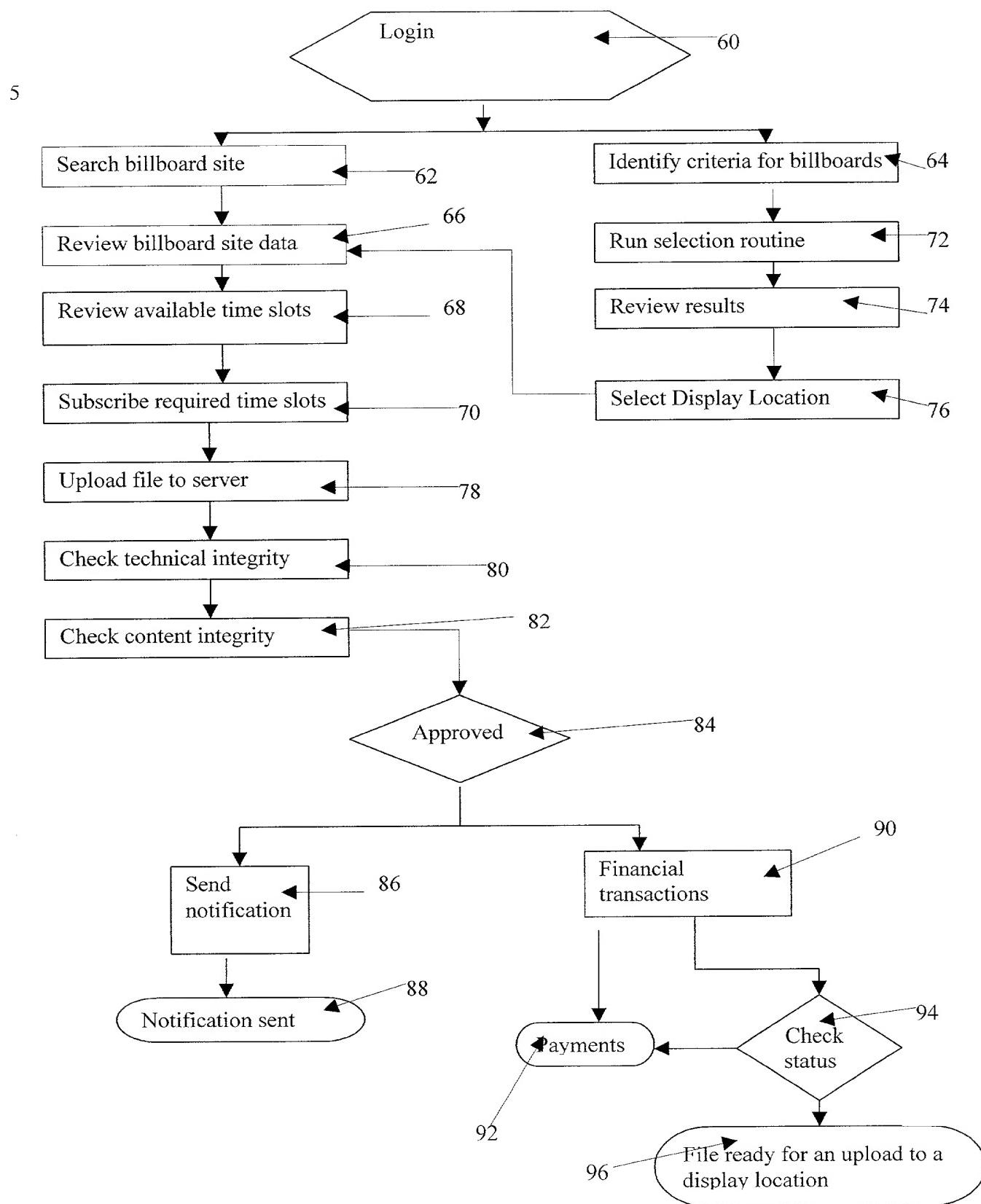


FIGURE 4

5

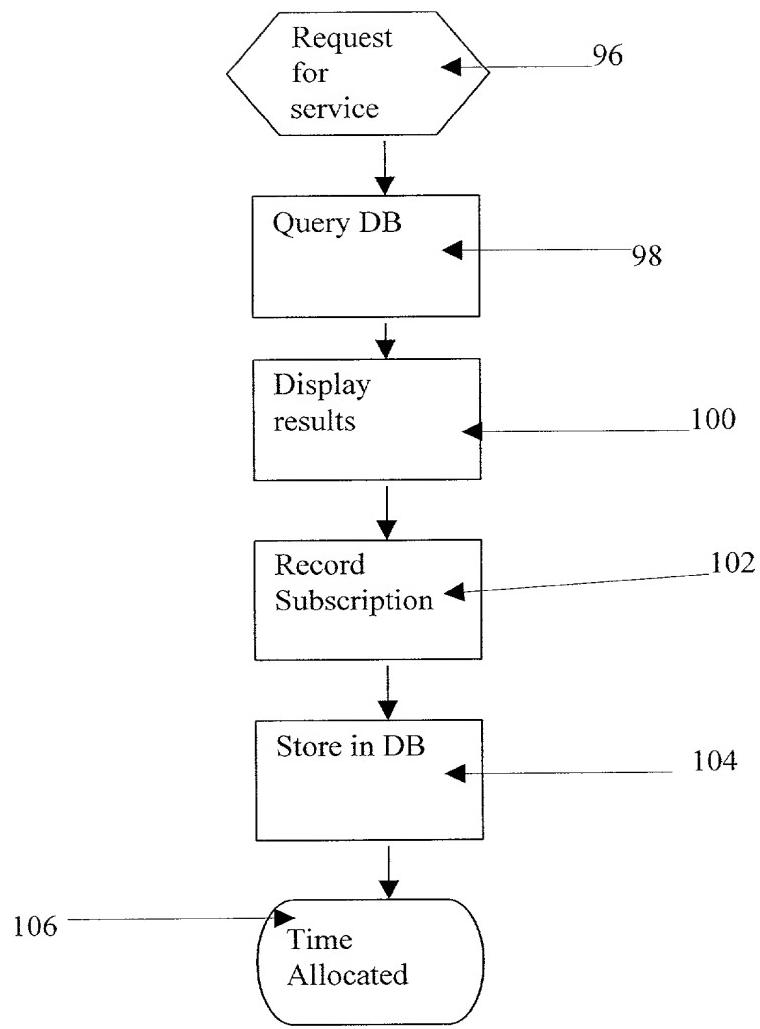


FIGURE 5

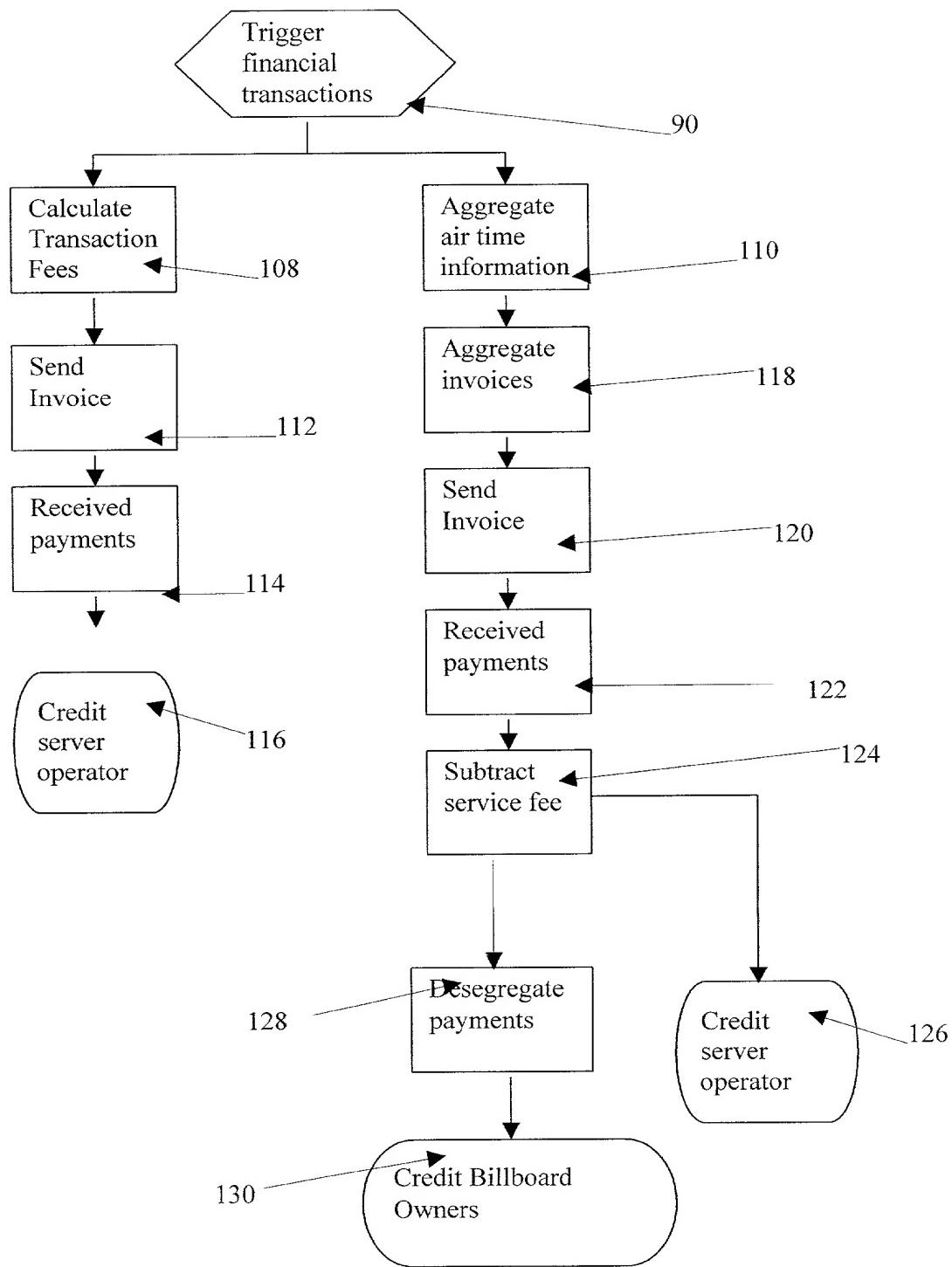
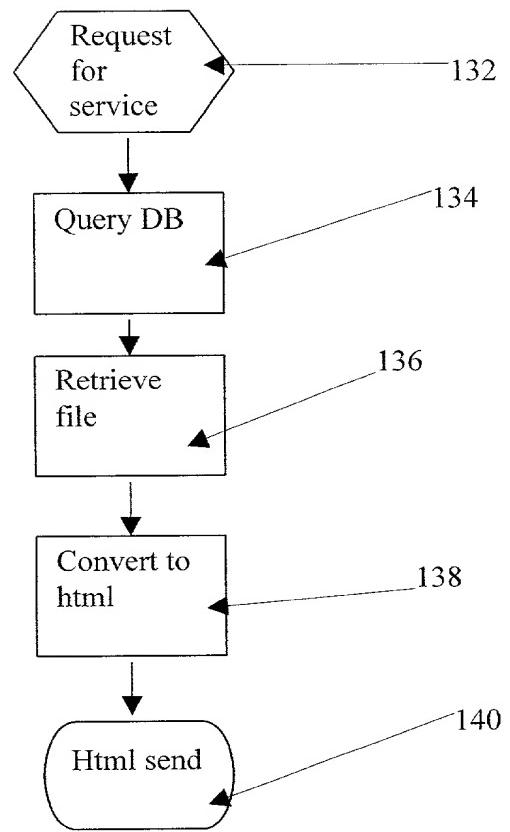


FIGURE 6



**DECLARATION AND POWER OF ATTORNEY**  
**FOR PATENT APPLICATION**

As below named inventors, we hereby declare that:

Our post office addresses and citizenships are as stated below next to our names.

We believe we are the original, first and joint inventors of the subject matter which is claimed and for which a patent is sought on the invention entitled:

**METHOD AND SYSTEM FOR DYNAMIC DISPLAY OF MARKETING CAMPAIGNS ON DISPLAY LOCATIONS VIA A NETWORK**

the specification of which is filed concurrently herewith.

We hereby state that we have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

We acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, Section 1.56(a).

We hereby claim foreign priority benefits under Title 35, United States Code, Section 119 of any foreign applications for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

**PRIOR FOREIGN APPLICATIONS**

**PRIORITY (I AIMFI)**

(Number)	(Country)	(Day/Month/Year)	X	Yes	No
2,293,556	Canada	17/12/1999			

We hereby claim the benefit under Title 35, United States Code, Section 120 of any United States applications listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, Section 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

N/A  
(Application Serial No.) (Filing Date) (Status) (Patented, pending, abandoned)

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as our attorneys, each with full power of substitution and revocation, to prosecute this application, to make alterations and amendments therein, to receive the patent, and to transact all business in the Patent and Trademark Office connected therewith.

We hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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